

[0039] What is claimed is:

1. A method for space diversity reception comprising:  
selecting from two or more antennae an active antenna that delivers a data-bearing signal having a signal quality at least as good as any of said antennae based upon measurements of said signal quality during reception of a preamble field of data frames having a substantially longer preamble field than other data frames.
2. The method of claim 1, wherein said data-bearing signal is generated according to IEEE standard 802.11g.
3. The method of claim 2, wherein said data frames having a substantially longer preamble field than that of other data frames are beacon frames.
4. The method of claim 1, wherein said data frames having a substantially longer preamble field than that of other data frames are received at substantially regular intervals.
5. The method of claim 4, further comprising:  
initiating said measurements of said signal quality periodically in anticipation of reception of said data frames having a substantially longer preamble field than that of other data frames.
6. The method of claim 5, further comprising;  
determining a length of said substantially regular intervals from a data field included in said data-bearing signal or in a synchronizing signal;  
initiating said measurements of said signal quality at intervals substantially equal in length to said length of said substantially regular intervals; and  
synchronizing said measurements of said signal quality to a specifically-recognizable element repeated periodically at substantially regular synchronization intervals of said data-bearing signal or said synchronizing signal.
7. The method of claim 6, further comprising;  
delaying initiation of said measurements of said signal quality to compensate for a phase difference between said substantially regular intervals and said substantially regular synchronization intervals.

8. The method of claim 6, wherein said substantially regular intervals have a substantially identical duration to said substantially regular synchronization intervals.
9. The method of claim 6, wherein said substantially regular intervals have a substantially identical duration and phase to said substantially regular synchronization intervals.
10. The method of claim 6, wherein said synchronizing signal is said data-bearing signal.
11. The method of claim 6, wherein said data field is a beacon interval field belonging to an IEEE standard 802.11g beacon frame.
12. The method of claim 6, wherein said specifically-recognizable element repeated periodically at substantially regular synchronization intervals is an IEEE standard 802.11g beacon frame.

13. A communication device comprising:
  - two or more monopole antennae; and
  - a receiver including at least:
    - an analog multiplexer to select a data-bearing signal from one of said antennae;
    - a signal quality measurement circuit to measure received signal quality from each of said antennae; and
    - an antenna selection controller to instruct said signal quality measurement circuit to measure said signal quality during reception of a preamble field of data frames having a substantially longer preamble field than other data frames, said controller also to identify from said two or more antennae an antenna that delivers a data-bearing signal having a signal quality at least as good as any of said antennae and to command said analog multiplexer to select said data-bearing signal from said antenna.
14. The communication device of claim 13, wherein said receiver further includes:
  - a medium access controller to extract data frames from a down-converted and demodulated version of said data-bearing signal and to provide to said antenna selection controller indications of occurrences of said data frames having a substantially longer preamble field than other data frames.
15. The communication device of claim 14, wherein said medium access controller is to provide to said antenna selection controller an indication of the time elapsing between successive occurrences of said data frames having a substantially longer preamble field than other data frames.
16. The communication device of claim 13, wherein said receiver further includes:
  - a baseband processor coupled to said analog multiplexer to process a down-converted version of said data-bearing signal according to IEEE standard 802.11g.
17. The communication device of claim 16, wherein said data frames having a substantially longer preamble field than other data frames are beacon frames.

18. A communication device comprising:

two or more monopole antennae; and

a receiver including at least:

an analog multiplexer to select a data-bearing signal from one of said antennae;

a signal quality measurement circuit to measure received signal quality from each of said antennae on receipt of a signal quality measurement request signal, and deliver a signal quality measurement result signal;

a medium access controller to extract data frames from a down-converted and demodulated version of said data-bearing signal and to provide indications of occurrences of said data frames having a substantially longer preamble field than other data frames and which are received at substantially regular intervals; and

an antenna selection controller to monitor said indications of occurrences of data frames having a substantially longer preamble field than other data frames and which are received at substantially regular intervals, to send said signal quality measurement request signal periodically in anticipation of reception of said data frames having a substantially longer preamble field than other data frames, to identify from said signal quality measurement result signal an antenna that delivers a data-bearing signal having a signal quality at least as good as any of said antennae and to command said analog multiplexer to select said data-bearing signal from said antenna.

19. The communication device of claim 18, wherein said media access controller is to determine a length of said substantially regular intervals from a data field included in said data-bearing signal or in a synchronizing signal and to indicate occurrences of a specifically-recognizable element repeated periodically at substantially regular synchronization intervals of said data-bearing signal or said synchronizing signal.

20. The communication device of claim 19, wherein said antenna selection controller is to send said signal quality measurement circuit request signal at intervals substantially equal in length to said length of said substantially

regular intervals and to synchronize said signal quality measurement request signal to said occurrences of said specifically-recognizable element.

21. The communication device of claim 20, wherein said antenna selection controller is to delay sending said signal quality measurement request signal to compensate for a phase difference between said substantially regular intervals and said substantially regular synchronization intervals.
22. The communication device of claim 18, wherein said receiver further includes:  
a baseband processor coupled to said analog multiplexer to process a down-converted version of said data-bearing signal according to IEEE standard 802.11g.
23. The communication device of claim 22, wherein said data frames having a substantially longer preamble field than other data frames are beacon frames.

24. A communication system comprising:

a first communication device including at least a transmitter; and

a second communication device including at least:

two or more monopole antennae; and

a receiver including at least:

an analog multiplexer to select a data-bearing signal from one of said antennae;

a signal quality measurement circuit to measure received signal quality from each of said antennae; and

an antenna selection controller to instruct said signal quality measurement circuit to measure said signal quality during reception of a preamble field of data frames having a substantially longer preamble field than other data frames, said controller also to identify from said two or more antennae an antenna that delivers a data-bearing signal having a signal quality at least as good as any of said antennae and to command said analog multiplexer to select said data-bearing signal from said antenna.

25. The communication system of claim 24, wherein said receiver further includes:

a medium access controller to extract data frames from a down-converted and demodulated version of said data-bearing signal and to provide to said antenna selection controller indications of occurrences of said data frames having a substantially longer preamble field than other data frames.

26. The communication system of claim 24, wherein said receiver further includes:

a baseband processor coupled to said analog multiplexer to process a down-converted version of said data-bearing signal according to IEEE standard 802.11g,

wherein said data frames having a substantially longer preamble field than other data frames are beacon frames.

27. A communication system comprising:

a first communication device including at least a transmitter; and

a second communication device including at least:

two or more monopole antennae; and

a receiver including at least:

an analog multiplexer to select a data-bearing signal from one of said antennae;

a signal quality measurement circuit to measure received signal quality from each of said antennae on receipt of a signal quality measurement request signal, and deliver a signal quality measurement result signal;

a medium access controller to extract data frames from a down-converted and demodulated version of said data-bearing signal and to provide indications of occurrences of said data frames having a substantially longer preamble field than other data frames and which are received at substantially regular intervals; and

an antenna selection controller to monitor said indications of occurrences of data frames having a substantially longer preamble field than other data frames and which are received at substantially regular intervals, to send said signal quality measurement request signal periodically in anticipation of reception of said data frames having a substantially longer preamble field than other data frames, to identify from said signal quality measurement result signal an antenna that delivers a data-bearing signal having a signal quality at least as good as any of said antennae and to command said analog multiplexer to select said data-bearing signal from said antenna.

28. The communication system of claim 27, wherein said media access controller is to determine a length of said substantially regular intervals from a data field included in said data-bearing signal or in a synchronizing signal and to indicate occurrences of a specifically-recognizable element repeated periodically at substantially regular synchronization intervals of said data-bearing signal or said synchronizing signal.

29. The communication system of claim 27, wherein said receiver further includes:

a baseband processor coupled to said analog multiplexer to process a down-converted version of said data-bearing signal according to IEEE standard 802.11g,

wherein said data frames having a substantially longer preamble field than other data frames are beacon frames.